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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER				
EASTMAN, AARON ROBERT				
ART UNIT		PAPER NUMBER		
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/572,892

**Applicant(s)**

STONES, IAN DAVID

**Examiner**

Aaron R. Eastman

**Art Unit**

3745

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 12-17 and 25-36 is/are rejected.
- 7) ☒ Claim(s) 5-11 and 18-24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 March 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/US)
- Paper No(s)/Mail Date 03/20/2006 & 03/27/2008
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the embodiment combining and impeller and two conduits (claims 11-15, 25-27 and 34-35) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 12-15, 25-27, 34 and 35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In re claims 12, 25 and 34, claims 12, 25 and 34 combine the embodiments shown in figures 3 and 4. This is a combination using two conduits and an impeller. This combination is not disclosed in the specification nor is it shown in any of the drawings in such a way as to enable one skilled in the art to make it without undue experimentation. Claims 13-15, 26-27 and 35 are similarly rejected because of their dependence on claims 12, 25 and 34 respectively.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4, 16, 17, 28-33 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Figure 1 of the instant application (regarded as Applicant's Admitted Prior Art and noted as AAPA hereinafter) in view of USP 1,287,020 (Hinsch hereinafter).

6. In re claim 1 AAPA discloses a vacuum pump (16) comprising a first pumping section (18), a first pump inlet (24) through which fluid can enter the pump and pass

through the first pumping section (18) towards a pump outlet (30), a second pumping section (20), a second pump inlet (26) through which fluid can enter the pump, the second pumping section (20) being arranged such that fluid entering the pump through the second inlet (26) passes through the second pumping section (20) towards the pump outlet (30), and at least one additional pumping section (22) downstream from the first (18) and second (20) pumping sections for receiving fluid therefrom and outputting fluid towards the outlet (30).

7. AAPA does not disclose a third pumping section, the second and third pumping sections being arranged such that fluid entering the pump through the second inlet is separated into a first stream passing through the second pumping section towards the pump outlet and a second stream passing through the third pumping section away from the pump outlet, means for conveying fluid passing through the third pumping section towards the outlet, and at least one additional pumping section downstream from the first, second and third pumping sections for receiving fluid therefrom and outputting fluid towards the outlet.

8. Hinsch teaches an arrangement comprising second (11) and third (6) pumping sections being arranged such that fluid entering the pump through the second inlet (between 11 and 6) is separated into a first stream passing through the second pumping section (11) towards the pump outlet (10) and a second stream passing through the third pumping section (6) away from the pump outlet (10) and means for conveying (12) fluid passing through the third pumping section (6) towards the outlet (10) (Fig. 7 of Hinsch).

9. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of AAPA by adding a third pumping section, the second and third pumping sections being arranged such that fluid entering the pump through the second inlet is separated into a first stream passing through the second pumping section towards the pump outlet and a second stream passing through the third pumping section away from the pump outlet, means for conveying fluid passing through the third pumping section towards the outlet, and at least one additional pumping section downstream from the first, second and third pumping sections for receiving fluid therefrom and outputting fluid towards the outlet as taught in Hinsch for the purposes of providing a pump of high capacity which allows of being easily converted into a pump of different output and head without requiring any changes to be made on the casing (page 1 lines 8-14 of Hinsch).

10. In re claim 2 the AAPA modification in re claim 1 discloses the pump according to claim 1 wherein the conveying means (12 of Hinsch) is arranged to convey fluid passing through the third pumping section to a location intermediate the second pumping section and said at least one additional pumping section (22 of AAPA).

11. In re claim 3 the AAPA modification in re claim 1 discloses the pump according to claim 2 wherein the second and third pumping sections are located between the first pumping section and said at least one additional pumping section (22 of AAPA).

12. In re claim 4 the AAPA modification in re claim 1 discloses the pump according to claim 3 wherein the conveying means (12 of Hinsch) is arranged to convey fluid passing through the first pumping section and fluid passing through the third pumping section to

a location intermediate the second pumping section and said at least one additional pumping section (22 of AAPA).

13. In re claim 16 the AAPA modification in re claim 1 discloses the pump according to claim 1 wherein the second and third pumping sections are located between the first pumping section and said at least one additional pumping section (22 of AAPA).

14. In re claim 17 the AAPA modification in re claim 1 discloses the pump according to claim 16 wherein the conveying means (12 of Hinsch) is arranged to convey fluid passing through the first pumping section and fluid passing through the third pumping section to a location intermediate the second pumping section and said at least one additional pumping section (22 of AAPA).

15. In re claim 28 the AAPA modification in re claim 1 discloses the pump according to claim 1 wherein each of the pumping sections comprises a dry pumping section.

16. In re claim 29 the AAPA modification in re claim 1 discloses the pump according to claim 1 wherein said at least one additional pumping section comprises at least one molecular drag stage (22 of AAPA).

17. In re claim 30 the AAPA modification in re claim 1 discloses the pump according to claim 1 wherein each of the first, second and third pumping sections comprises at least one turbo-molecular stage.

18. In re claim 31 the AAPA modification in re claim 1 discloses the pump according to claim 30 wherein each of the first, second and third pumping sections comprises at least three turbo-molecular stages.

19. In re claim 32 the AAPA modification in re claim 1 discloses the pump according to claim 31 comprising a drive shaft having located thereon at least one rotor element for each of the pumping sections.
20. In re claim 33 the AAPA modification in re claim 1 discloses the pump according to claim 1 comprising a drive shaft having located thereon at least one rotor element for each of the pumping sections.
21. In re claim 36 the AAPA modification in re claim 1 discloses a differentially pumped vacuum system comprising two chambers and further comprising a pump according to claim 1 for evacuating each of the chambers.

***Allowable Subject Matter***

22. Claims 5-11 and 18-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USP's 1073895, 1912452, 2562996, 2668501, 3668393, 4889995 and 5228838 as well as USPAP's 2004/0013514 and 2008/0063541 all disclose pumps with multiple, axially spaced pumping sections and multiple inlets.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron R. Eastman whose telephone number is (571)270-3132. The examiner can normally be reached on Mon-Thu 9:00-4:30.



If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aaron R. Eastman/  
Examiner, Art Unit 3745

/Edward K. Look/  
Supervisory Patent Examiner, Art Unit 3745